ABSTRACT OF THE DISCLOSURE

There is provided an electromagnetic (EM) shielding composite and its method of manufacture having low observability and a low loading level, e.g., 1.5 weight percent, of nanotubes mixed in a base host polymer, wherein the EM shielding composite is an effective shield and absorber for broadband plane wave EM radiation. The loading levels of nanotubes are sufficiently low to leave the mechanical properties of the base polymers essentially unchanged, making this approach widely applicable to a broad range of applications.